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Notes on the Mitridae of the Eastern Pacific

I - *Mitra fultoni* E. A. SMITH

by

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(Plate 7 and one Textfigure)

Introduction

This is the first of a series of papers to be presented on the family Mitridae as it occurs in the Eastern Pacific area. It is my plan to take the four subgenera occurring in the area, *Mitromica*, *Scabricola*, *Strigatella*, and *Tiara*, separately, beginning with the subgenus *Strigatella*, and discuss each of the species involved in a series of papers, one paper to each species.

History & Classification

The family Mitridae was segregated from the Linnaean Volutidae by Röding (1798). The genus *Mitra* is usually incorrectly attributed to Lamarck (1799), but as Röding's work precedes that of Lamarck by one year, he is the author for the family and the genus under the rules of priority.

Mitra is an extremely large genus that has over a thousand specific and subspecific names assigned to it. Some authors have elevated subgenera to generic rank; there may be merit in this in the case of those subgenera which are well defined. This makes it possible to demonstrate, by the use of nomenclature, the closer relationship among the species of a subgenus. In other words, it would allow for one more subdivision which might be desirable in some, but not all, cases. If this system of classification were followed to its logical conclusion, the end result would be a large number of monotypic genera and subgenera. It is my feeling

that the whole group is closely enough knit to use the single generic name *Mitra*; this is the classification which will be followed in this series of papers.

Description

The present paper deals with one of the rarer species of the subgenus *Strigatella* Swainson, 1841. *Mitra fultoni* was described by E. A. Smith (Ann. Mag. Nat. Hist., S. 6, vol. 9, 1892) and as far as I can ascertain, this is one of those few species which have no known synonyms.

Smith gives a good diagnosis in Latin and then goes on to complete his description with the English equivalent. Only the English description is quoted here:

"This species is well characterized by the punctate sulci, the punctures falling in regular longitudinal rows, through which pass well-marked impressed lines of growth. It has, I believe, been confounded with *M. orientalis*, Gray, by some conchologists; but from that species it may be sufficiently distinguished by the above-mentioned feature and the difference of form. The whorls are more convex, the epidermis blacker, and the fine spiral striae which adorn the surface of that species are scarcely indicated in the present form."

Mitra fultoni has a thin, smooth, shiny black periostracum which is often worn, revealing the brown shell underneath. The interior of

the shell is white in the adult, while the younger specimens show brown through the white enamel. The soft parts of the animal are white. This holds true for all members of the genus examined by me so far.

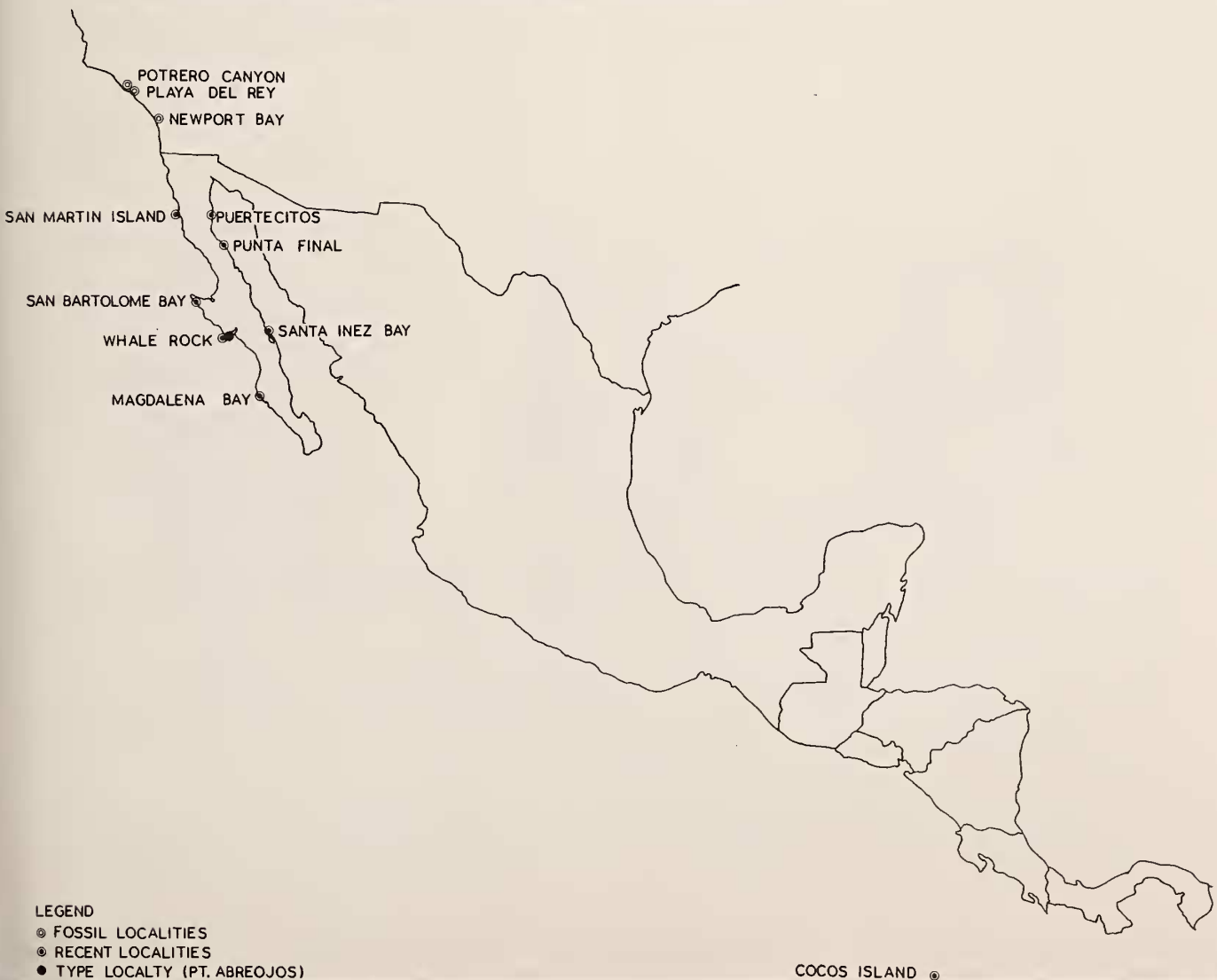
Identification & Relationship

For identification of the species the main features are the punctate sulci mentioned by Smith in his description. These sulci appear not only spirally as he mentions, but also axially. The over-all appearance is similar to a checkerboard with the small pits in the corners of the squares. The pits occur even on the base of the nuclear whorls. Other Eastern Pacific species of *Mitra* which have this peculiar pitting are *M. lens* Wood, 1828; *M. orientalis* Gray, 1834; *M. idae* Melvill, 1893; and *M. montereyi* Berry, 1920.

Mitra fultoni can be distinguished from *M. lens* by the former's smooth appearance. The pitting in *M. lens* is limited to the area between the coarse, flattened axial ribs, the pits are

twice the size of those occurring in *M. fultoni*, and are not nearly as numerous. In *M. orientalis*, *M. idae*, and *M. montereyi* the pitting occurs only on the spire and upper part of the body whorl whereas in *M. fultoni* the pitting covers not only the spire but the entire body whorl as well.

Mitra fultoni is one species of a complex (including *M. idae*, *M. orientalis*, and *M. montereyi*) within the subgenus *Strigatella*. The Peruvian species, *M. orientalis*, is the only other member of this complex whose range may possibly extend into the Panamic area. Both *M. idae* and *M. montereyi* are members of the Californian province, exclusively. The shape of *M. montereyi* and its slight pitting, which must be seen with a good hand lens or a microscope, suggest that *M. fultoni* and *M. montereyi* are closely related members of this particular group within the subgenus. Perhaps when further research on the radular structure, cytology and genetics has been done on the species involved, it will be possible to make more definite statements on the relationships within this complex.



Type Locality & Range

Smith gave the type locality for *Mitra fultoni* as Point Abreojos, Lower California, Mexico, Latitude 27° N., Longitude 113° W., on the Pacific side of the peninsula. Williamson (1906) quotes Dall as saying that he had seen no specimens from north of San Diego; in Burch (1945) S. Stillman Berry is reported as having taken specimens at San Diego.

One specimen in the California Academy of Sciences (no. 17'749 Cal. Acad.) extends the range to Santa Inez Bay in the Gulf of California. I have dredged one dead specimen (Sphon Collection, no. 504) and a fragment of another from Punta Final, near Bahía San Luis Gonzaga. I have also taken a living specimen at Puertecitos (Sphon Collection, no. 503), which extends the range still farther up the eastern side of Baja California. Another specimen (no. 23'077 Cal. Acad.) extends the range south to Cocos Island, approximately 300 miles off the coast of Central America. As far as it is possible to ascertain, there are no records, even vague ones, to place the species on the mainland of Mexico or Central America. It is on the basis of the specimens mentioned that the range extensions are recorded.

The majority of specimens I examined have come from the type locality. This is in the area where the greatest overlap between the Californian and Panamic faunas occurs; since there are far more records for the species occurring in the more northern Californian province, the species probably should be considered as a member of that province and merely a "straggler" in the Panamic area. At least it should be so considered until more specimens from the Panamic area come to light.

Fossil Record

The fossil records of *Mitra fultoni* are of no help in assigning it to a particular province. There are three localities in Southern California from which fossils of the species are known: Valentine (1956) reports it from Potrero Canyon in the Pacific Palisades area of Los Angeles County; Kanakoff and Emerson (1959) from the Newport Bay Mesa area in Orange County; and George Willett from the Lincoln Avenue deposit in the Playa del Rey area of Los Angeles County. These three records are from warm water, Upper Pleistocene deposits and are a mixture of what are now the Californian and Panamic faunas.

Type Specimen

In the original description of the species, Smith gives the dimensions of the holotype as: "Long. 39 mm., diam. 13; aperture 19½ long; 5 lat." This would indicate that the type is an adult shell but not quite the maximum size as there are larger specimens in the Stanford University collection.

Smith figured the species with a line drawing and the only other illustration of the species which I can locate is in a paper by Mrs. Burton Williamson (1906). Smith did not say where the type was deposited; however, it is now in the British Museum (Natural History), B. M. (N. H.) Reg. No. 92.2.2.38.

Summary

Mitra fultoni E. A. Smith, 1892, is a rare species which belongs to the subgenus *Strigatella* and to the *Mitra orientalis-idae* complex within the subgenus. It is, however, quite distinct from all other members of that complex due to the distinct pitting which occurs in both axial and spiral lines on the spire as well as the entire body whorl.

The known Recent range of the species is along the Pacific Coast from San Diego, California, to the type locality into the Gulf of California to Santa Inez Bay, Punta Final, and Puertecitos on the eastern side of Baja California, and further south to Cocos Island. The species is not known to occur on the mainland of Mexico or in Central America. Probably it should be considered as a member of the Californian faunal province even though there are a few records of its occurrence in the Panamic province.

Specimens Examined

(Recent and Fossil)

1. 15 specimens from Potrero Canyon, Upper Pleistocene, Los Angeles County, California. UCLA Geology Collection (Sp. Cat. 10'078).
2. 12 specimens from Lincoln Avenue deposit, Upper Pleistocene, Playa del Rey, Los Angeles County, California. Los Angeles County Museum Collection (Loc. #59 S. 218, Willett Collection).
3. 4 specimens from Newport Bay Mesa, Upper Pleistocene, Orange County, California. Los Angeles County Museum (Loc. #66-2).

Explanation of Plate 7

Figures 1 to 3: *Mitra fultoni* E. A. SMITH, 1892

(a: dorsal aspects - b: ventral aspects; all figures x 2.5)

Figure 1: Puertecitos, Baja California, Mexico (Sphon collection no. 503)

Figures 2 and 3: Whale Rock, near Point Abrejos, Baja California, Mexico
(Cate collection no. M - 46)